COMPARISON OF POSTEMERGENCE HERBICIDE OPTIONS IN ENLIST COTTON

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Abstract

The evolution of herbicide-resistant Palmer amaranth and other weeds has left few effective weed control options in current cotton production systems. The introduction of Enlist™ cotton with three herbicide-resistant traits will allow postemergence applications of 2,4-D, glyphosate, and glufosinate for difficult-to-manage weeds in cotton.

An experiment was conducted in 2015 at the University of Arkansas Northeast Research and Extension Center located in Keiser, AR to evaluate postemergence herbicide options in Enlist cotton. All treatments contained a preemergence application of fluometuron applied in conjunction with various postemergence herbicide options potentially available in the Enlist cotton system. The preemergence application was made at planting, early postemergence application at the 2- to 3-leaf growth stage of cotton, and the mid-postemergence application at the 5- to 6-growth leaf stage. Visual ratings of crop injury and glyphosate-resistant Palmer amaranth and barnyardgrass control were taken 2 weeks after the mid-postemergence application timing. Enlist Duo-containing programs provided a high level of glyphosate-resistant Palmer amaranth and barnyardgrass control and the addition of Enslit Duo herbicide programs tended to improve control over programs without. No significant differences were observed for weed control whether Enlist Duo was applied in the first or second postemergence application. However, all programs should begin with preemergence residual herbicides. Additionally, control of both species tended to increase as the number of effective mechanisms of action increased. The use of Enlist cotton provides a valuable tool to growers, allowing them to implement herbicide programs capable of controlling difficult-to-manage weeds such as glyphosate-resistant Palmer amaranth. For the best stewardship of this technology and in order to achieve effective season-long control, growers should continue to deploy multiple effect modes of action to delay the evolution of resistance.